



Exercise 2.8

Promoting Forest Health



There are many dangers and opportunities presented by the ambiguity of forest health. Natural resource professionals should be able to define and critique many different qualities of forest health (Part 1) and use them to communicate forest health issues to the public (Part 2).

Objectives: Participants will be able to do the following:

1. Define and critique many different qualities of forest health.
2. Recognize that their definition of forest health is not necessarily the same as their colleagues' or landowners'.

Materials:

Copies of *Handout 1: Forest Health Definitions*

Fact Sheet 2.5: Forest Health

Presentation 2.2

Copies of *Handout 2: Forest Health Issues*, cut into slips

Time: 40-60 minutes

1. Before the session begins, copy the definitions (*Handout 1: Forest Health Definitions*) and list of health issues (*Handout 2: Forest Health Issues*) for participants. Make sure everyone has a copy of *Handout 1* and that each group of ten participants will have one set of issues. You may wish to add regional examples of additional forest health indicators, too. Cut copies of *Handout 2* so each indicator is on a separate slip and put each set in an envelope.

Part 1

2. Explain that while forest managers may be quite knowledgeable about forest health characteristics, the public is usually not. People have the sense that forest health is good, but how it is achieved is less clear. Are forests that are left alone healthier than those that are managed? Use ***Fact Sheet 2.5: Forest Health*** and ***Presentation 2.2*** to set the stage for a discussion of forest health in the interface.
3. Distribute *Handout 1* and ask everyone to read through these perspectives on forest health. Ask them to consider who would agree with each of these perspectives. Which definition best represents their personal definition or their agency definition? Do some work in combination?
4. Then ask participants to consider how the public might perceive forest health. Which definitions might make more sense to them? Which definitions might make interface management activities more challenging?

5. Ask your participants to arrange themselves on a line, where one end of the line is “Great Definition of Forest Health” and the other end is “Really Lousy Definition of Forest Health.” Read the first definition, and ask them to stand on this line after considering the value of this definition for communicating forest health to interface residents. As you read the next definition, give people a few minutes to reposition themselves on the line. If everyone clumps up and agrees with each other, continue reading. For a definition that generates a variety of perspectives (as indicated by the spread of participants along the line) stop and discuss the reasons. Begin a large group discussion about why participants chose a particular position, or divide the line in two equally populated pieces and slide one fragment so that each person has someone to talk to from the other line. Would their positions be different if they were communicating forest health in a rural community? An urban community? Use the discussion to clarify a workable definition of forest health for interface audiences.

Part 2

6. Using an agreed-upon definition of forest health for interface audiences, divide the group into smaller groups of about ten participants, and distribute a set of slips to group members. Everyone should get at least 3 topics.
7. Ask people to mingle within their group and trade slips of paper—according to any rules they negotiate! They may trade one topic for one topic, or three for one, or any combination. Introduce the exercise with these instructions (also available in **Presentation 2.2**):

The goal of this exercise is for each of you to assemble the health issues you think you can most effectively use to promote your services to interface landowners or communities. Because some aspects of forest health seem less relevant or less sexy than others, this is not an easy task. In fact, you may find some aspects of forest health a detriment to your professional credibility because you are unable to solve them. Each slip of paper contains a different health issue.

8. Reassemble after 10 minutes of mingling, bartering, and exchanging slips of paper. Lead a discussion about forest health by asking group members to explain a relevant or ideal combination of issues and others to describe unhelpful issues. Ask participants to explain why their aspects of forest health are relevant, good, useful, problematic, or irrelevant.
9. Listed here are other questions you can use to facilitate discussion:
 - What are difficulties caused by multiple and conflicting definitions of forest health?
 - What are some reasons why forest health remains a politically appealing and publicly accessible way to frame forest management?
 - Is there anything wrong with exotic and non-invasive species (e.g., tomatoes, roses, zinnias)?

Summary

Forest health is an elusive topic that could be beneficial in some conversations with interface landowners. It could also become problematic. This discussion should enable workshop participants to consider what aspects of forest health may be most useful to promote.

Handout 1: Forest Health Definitions

Sustained Yield

Forest health can be defined in terms of a forest maximizing the sustained yield of wood, year after year in perpetuity. This may be accomplished by taking out all the unnecessary parts, such as “weed” species, that compete with desired, marketable species. A healthy, managed forest would be composed of marketable tree species, planted in well-drained soil that does not erode, and supplied with water, nutrients, sunshine, and carbon dioxide as needed. Each tree’s location would be carefully controlled to maximize its access to air, water, soil, and sunshine without wasting these inputs. Trees planted in long, straight rows speed mechanical harvesting, making the forest an efficient system from input to output. Trees in this regulated forest do not reach old age.

Old, Mature, Climax Forest

Old trees, native species, trees of various ages, meandering pathways, downed trees full of insects, dead snags providing wildlife habitat, and variability in species and scenery are characteristics of this version of forest health. Rather than emphasize the sustained flow of resources, as does the previous definition, this one emphasizes characteristics of an “old-growth” forest. This forest demonstrates and connotes health by maintaining a forest ecosystem.

Biodiversity

Biodiversity can be defined in ways that emphasize genetic diversity, species diversity, and/or ecosystem diversity. Most often the term is used to reference species diversity. Forests are healthy if they support high biodiversity, or enough biodiversity to assure a functional ecosystem. This is particularly true for less charismatic species such as bacteria, whose role in ecosystem health is considerable. There is debate about whether diversity leads to stability, as once was suggested and used as justification for increasing biodiversity. It now appears that some less diverse systems are very stable and some very diverse systems are unstable.

Integrity and Naturalness

A healthy system can be defined in terms of its similarity to pre-human conditions when it had integrity: “a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region.” (Angermeier and Karr 1994). Deviations from these natural conditions or from the range of natural variability define deviations from integrity. The goal of management, then, is to restore these natural conditions and reduce the impact of humans. A challenge with this definition is that there are many previous pre-human conditions, all of which are natural (e.g., 12,000 years ago during glaciation, 2 million years ago before humans, 4 billion years ago before life). The selection of 1491, for example, (beginning of European settlement) as the preferred set of “natural” conditions is quite arbitrary.

Ecosystem Goods and Services

A healthy system can also be defined as one that provides a sustained flow of goods and services valued by the landowner and community. Water retention and purification, wildlife habitat, wood

supply, recreation opportunities, oxygen production, carbon sequestration, and related goods and services are highly valued and produced by a healthy, functioning forest. A popular definition of poor forest health notes conditions such as slowed tree growth, soil compaction and erosion, slowed soil formation, human health and safety hazards caused by water quality and quantity, high risk of fire, and a faltering flow of desired goods and services. Thus, health can be defined entirely in terms of the social values assigned to forest outputs and processes.

Exotic versus Native

Native species are often seen as characteristic of healthy systems, and such is certainly the case if health is understood as promoting integrity, naturalness, or native biodiversity. Native species also may be easier to manage and better able to provide valued ecosystem goods and services. But some exotic species may be better able to provide these goods and services and create a stable supply of valued forest qualities. The case for natives over exotics is not at all obvious; many honeybees, grains, and fruit trees are highly valued exotics.

Resilience

Forest health also can be defined as the ability to resist perturbations caused by weather, resource extraction, insect infestation, fire, or other disturbances. This definition reflects the growing awareness that ecological systems are in a state of dynamic equilibrium and, if perturbed enough, can dramatically restructure all system inputs and outputs. Thus, “a healthy forest has the capacity to vigorously renew itself and to recover from a wide range of disturbances while meeting current and future human needs for desired levels of values, uses, products, and services” (Wear and Greis 2002, Gundersen and Holling 2002).

References

- Angermeier, P. L. and J. R. Karr. 1994. "Biological Integrity versus Biological Diversity as Policy Directives." *BioScience* 44(10): 690-697.
- Gundersen, L. H. and C. S. Holling, eds. 2002. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington DC: Island Press.
- Wear, D.N. and J.G. Greis. 2002. *The Southern Forest Resource Assessment Summary Report*. USDA Forest Service, Southern Research Station, <http://www.srs.fs.usda.gov/sustain/index.htm> (accessed August 30, 2005).

Handout 2: Forest Health Issues

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| Young, thriving, trees | Carbon sequestration | Biodiversity |
| Old, mature, climax forest | Integrity and naturalness | Habitat |
| Energy conservation | Ecosystem goods and service | Regulated forests |
| Ecological resilience | Habitat for threatened and endangered species | Sudden oak death syndrome |
| Extreme weather | Ozone | Acid deposition |
| Climate change | Land-use change | Gypsy moth |
| Construction damage | Invasive species | Non-native species |
| Butternut canker | Oak decline | Fusiform rust |
| Dogwood anthracnose | Littleleaf disease | Household dogs |
| Annosum root disease | Hemlock woolly adelgid | Soil compaction |
| Southern pine beetle | Balsam woolly adelgid | Roadside dumping |
| Free-roaming cats | Poor herbicide application | Lyme disease |
| Poor tree trimming (topping) | Wrong tree for the site | Hurricane damage |